

## DAFTAR PUSTAKA

- Abbott, W. S. (1987). A Method of Computing Effectiveness of an Insecticide. *Journal of the American Mosquito Control Association*. 3(2): 302-303.
- Aeny, T.N., Prasetyo, J., Suharjo, R., Dirmawati, S.R., Efri., & Niswati, A. (2018). Short Communication: Isolation and Identification of *Actinomycetes* Potensial as the Antagonist of *Dickeya zae* Pineapple Soft Rot in Lampung Indonesia. *Biodiversitas*, 19(6): 2052-2058.
- Alatas, S., Sirajuddin, I., Irfan, M., & Annisava, A.R., (2019). Hasil jagung manis (*Zea mays* Saccharata Sturt.) yang ditanam dengan tanaman sela pegagan (*Centella asiatica* L. Urban) pada beberapa taraf dosis pupuk anorganik. *Jurnal Agroekoteknologi*. 10(1). 23-32.
- Alblooshi, A.A., Purayil, G.P., Saeed, E.E., Ramadan, G.A., Tariq, S., Altaee, A.S., El-Tarabily, K.A., & AbuQamar, S.F. (2022). Biocontrol Potential of Endophytic Actinobacteria Against *Fusarium solani*, the Causal Agent of Sudden Decline Syndrome on Date Palm in the UAE. *J. Fungi*. 8, 8.
- Ambarwati., & Purwanti, E. (2012). Keanekaragaman *Streptomyces* Yang Berasosiasi dengan Rizosfer Jagung (*Zea mays*). Prosiding Seminar Biologi. Surakarta. Universitas Muhammadiyah Surakarta. 1-18.
- Amelia, R. & Aditiawati, P. (2016). Keanekaragaman Bakteri Rizosfer Pemacu Pertumbuhan Tanaman (Plant Growth Promoting Rhizobacteria/PGPR) selama Pertumbuhan Ubi Jalar Cilembu (*Ipomoea batatas* L var. Rancing). PROSIDING SNIPS. Bandung. Institut Teknologi Bandung. 899-906.
- Angraeni, M., Handayani, T.T., Wahyuningsih, S. & Mahfut. (2021). Kajian Ketahanan Anggrek Hasil Induksi *Ceratorhiza* Terhadap Infeksi ORSV Berdasarkan Analisis Klorofil. *Indonesian Journal of Biotechnology and Biodiversity*, 5(2): 61 – 68.
- Anggreiny, A., Handayani, T.T., Mahfut., & Wahyuningsih, S. (2021). Study of orchid resistance induced by *Ceratorhiza* sp. against orsv Infection Based on Peroxidase Activity. *Bioscience* 5 (2): 103-110.
- Annisa, T.F., Yanti, Y., & Nurbailis. (2023). Eksplorasi Aktinobakteria Indigenus untuk Pengendalian Penyakit Busuk Tongkol oleh *Fusarium verticillioides* dan Meningkatkan Pertumbuhan jagung. [Skripsi]. Universitas Andalas. Fakultas Pertanian. Padang.

- Ariyanti, Y. & Sianturi. (2019). Ekstraksi DNA Total dari Sumber Jaringan Hewan (Ikan Kerapu) Menggunakan Metode Kit for Animal Tissue. *J. Sci. Appl. Technol.* 3: 40–45.
- Asriani, A., & Ma'Mun, S. R. (2019). Pengaruh Teknologi Faktor Produksi terhadap Peningkatan Usahatani Jagung. *Jurnal Inovasi Sains dan Teknologi (INSTEK)*, 2(1): 14–22.
- Asrul, & Aryantha, I.N.P.. (2020). Isolasi dan Identifikasi Bakteri Pelarut Fosfat dari Tanah Rhizosfer Kelapa Sawit. *Lumbung.* 19(1): 30-39.
- Bacon, C.W., Glenn, A.E. & Yates, I.E. (2008). *Fusarium verticillioides*: Managing the endophytic association with maize for reduced fumonisins accumulation. *Res. Article.* 27(3–4): 411–446.
- Badan Pusat Statistik Sumatera Barat. (2023). *Dasar panen, produksi, dan produktivitas jagung, Sumatera Barat*. Badan Pusat Statistik.
- Baiyee, B., Ito, S., & Sunpapao, A. (2019). *Trichoderma asperellum* T1 mediated antifungal activity and induced defense response against leaf spot fungi in lettuce (*Lactuca sativa* L.). *Physiological and Molecular Plant Pathology.* 106: 96-101.
- Baker, G.C., Smith, J.J., & Cowan, D.A. (2003). Review and re-analysis of domain-specific 16S primers. *J Microbiol Methods.* 55(3):541-55.
- Barka, E.A., Vatsa, P., Sanchez, L., Vaillant, N.G., Jacquard, C., Klenk, H.P., Clément, C., Ouhdouch, Y. & Wezeld, W.G.V. (2016). Taxonomy, Physiology and Natural Products of Actinobacteria. *Microbiology and Molecular Biology Reviews.* 80 (1): 1-45.
- Barnito, N. (2009). *Budidaya Tanaman Jagung Suka Abadi*. Yogyakarta. 96 hal.
- Bateman, D.F. (1967). Increase In Peroxidase Desersed Plant Tissue In Source Book Of Laboratory Exercise In Plant Pathology. San Fransisco: WH Freeman and Co.
- Bhatti, AA., Haq, S., & Bhat, A.A. (2017). *Actinomycetes* Benefaction Role in Soil and Plant Health. *Microb. Pathog.* 111:458-467.
- Bradford, M. M. (1976). A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. *Anal Biochem.* 72: 248-254.
- Bubici, G. (2018). *Streptomyces* spp. as Biocontrol Agents Against *Fusarium* Species. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources.* 13(50): 1–15.

- Budi, M.B.S. & Majid, A. (2018). Potensi Kombinasi *Trichoderma* SP dan Abu Sekam Padi sebagai Sumber Silika dalam Meningkatkan Ketahanan Tanaman Jagung (*Zea mays*) terhadap Serangan Penyakit Bulai (*Peronosclerospora maydis*). Di dalam: Seminar Nasional Program Studi Agribisnis Fakultas Pertanian Universitas Jember; Jember. 03 November 2018. Jember: Fakultas Pertanian Universitas Jember.
- Bustami, G. (2012). Potensi Jagung. Kementerian Perdagangan Republik Indonesia. Jakarta
- Chakravorty, S., Helb, D., Burday, M., Connell, N., Alland, D. (2016). A detailed analysis of 16S ribosomal RNA gene segments for the diagnosis of pathogenic bacteria. *J Microbiol Methods*. 2007(9): 330–9.
- Candra, I.A., & Syamsu, F.D. (2020). Interaksi Tanaman Pasca Infeksi Gemini virus Berdasarkan Patospesifikasi. *Jurnal Viabel Pertanian*, 14(2).
- Cavaglieri, L., Orlando, J., Rodriguez, M.I., Chulze, S., & Etcheverry, M. (2005). Biocontrol of *Bacillus subtilis* against *Fusarium verticillioides* in vitro and at the maize root level. *Res. Microbiol*, 156: 748–754.
- Chen, F., Wang, M., Zheng, Y., Luo, J., Yang, X., & Ang, X. (2009). Quantitative changes of plant defence enzymes and phytohormone in biocontrol of cucumber Fusarium wilt by *Bacillus subtilis* B579. *World Journal of Microbiology and Biotechnology*, 26: 675–684.
- Chen, X., Yang, B., Huang, W., Wang, T., Li, Y., Zhong, Z., Yang, L., Li, S., & Tian, Z., (2018). Comparative proteomic analysis reveals elevated capacity for photosynthesis in polyphenol oxidase expression-silenced clematis terniflora. *J. Mol.* (19): 3897.
- Chu, W.H. (2006). Optimization of Extracellular alkaline protease production from species of *Bacillus*. *Ind Microbiol. Biotechnol*, 24: 241-245.
- Conn, V.M., Walker, A.R., & Franco, C.M.M. (2008). Endophytic Actinobacteria Induce Defense Pathways in *Arabidopsis thaliana*. *Molecular Plant-Microbe Interactions*. 21(2): 208-218.
- Dachlan, A., Kasim, N., & Sari, A. K. (2013). Uji Ketahanan Salinitas Beberapa Varietas Jagung (*Zea mays* L.) Dengan Menggunakan Agen Seleksi NaCl. *Biogenesis*, 1(1).
- Dewi, R.S., Giyanto., Sinaga, M.S., Dadang., & Nuryanto, B. (2020). Bakteri Agens Hayati Potensial terhadap Patogen Penting pada Padi. *Fitopatologi Indonesia*. 16(1): 37-48

- Djaenudin, N. & Muis, A. (2013). Uji Patogenesis *Fusarium moniliforme* Sheldon terhadap Sembilan Varietas Jagung. Balai Penelitian tanaman Serealia.
- Dubey, A., Ashwani K., Mohammad L.K., & Devendra K.P. (2021). Plant Growth-promoting and Bio-control Activity of *Micrococcus luteus* Strain AKAD 3-5 Isolated from the Soybean (*Glycine max* (L.) Merr.) Rhizosphere. *The Open Microbiology Journal*. 15: 188-197.
- Duncan, K.E. & Howard, R.J. (2010). Biology of maize kernel infection by *Fusarium verticillioides*. *Mol. Plant-Microbe Interac. J.* 23(1): 6-16.
- Durán, A. & Nombela, C. (2004). Fungal Cell Wall Biogenesis: Building a Dynamic Interface with the Environment. *Microbiolog.* 150: 3099-3103.
- Eller, M.S., Robertson, J.A., Payne, G.A., & Hollander, J.B. (2008). Grain yield and *Fusarium* ear rot of maize hybrids developed from lines with varying levels of resistance. *Maydica*. 53: 231- 137.
- Faatih, M. (2012). Dinamika Komunitas Aktinobakteria Selama Proses Pengomposan. *Jurnal Widyariset*. 15(3), 611-618.
- Fadil, M., Yanti, Y., & Khairul, U. (2023b). Seleksi Aktinobakteria Indigenous untuk Pengendalian Penyakit Hawar Daun Bakteri (*Xanthomonas oryzae pv. oryzae*) Serta Peningkatan Pertumbuhan Padi. *Agrohita Jurnal Agroteknologi*. 8(1), 93-105.
- Fitriatin, B.N., Manurung, D.F., Sofyan, E.T., & Setiawati, M.R. (2020). Compatibility Phospahe Solubility and Phosphatase Activity by Phosphate Solubilizing Bacteria. *Haya Saudi J Life Sci*. 5(12): 281- 284.
- Fiqriansyah, M., Putri, S.A., Syarif, R., Rahmadani, A.S., Pranie, T.N., Adhayani, A.N., Fauzan, N.T., Bachok, N.A., & Mangabdian, M. (2021). Teknologi Budidaya Tanaman Jagung (*Zea mays*) dan Sorgum (*Sorghum bicolor* (L.) Moench). Penerbit Jurusan Biologi FMIPA UNM. Malang.
- Gai, X., Dong, H., Wang, S., Liu, B., Zhang, Z., Li, X., & Gao, Z. (2018). Infection cycle of maize stalk rot and ear rot caused by *Fusarium verticillioides*. *PLoS ONE*. 13(7).
- Gandjar & Indrawati. (1999). Pengenalan Kapang Tropik. Jakarta : Yayasan Obor Indonesia.
- Glare, T., Caradus, J., Gelernter, W., Jackson, T., Keyhani, N., Kohl, J. & Stewart, A. (2012). Have Biopesticides Come of Age. *Trends in Biotechnology*. 30 (5): 250-258.

- Goodfellow, M., Kämpfer, P., Busse, J.C., Trujillo, M.E., Suzuki, K., Ludwig, W., & Whitman, W.B. (2012). *Bergey's Manual of Systematic Bacteriology*, specifically Volume 5: *The Actinobacteria*.
- Gordon, S.A., & Weber, R.P. (1957). Colorimetric estimation of indole acetic acid. *Plant Physiology*. 26: 192- 195.
- Grasso, L.L., Martino, D.C., & Alduina, R. (2016). Production of Antibacterial Compounds from Actinomycetes. In: Dhanasekaran D, Jiang Y (Eds.) *Actinobacteria, Basics and Biotechnological Applications*. *Intech Open Access Publication*. 177-198.
- Harir, M., Khatib, M.A., Costa, J., Baratto, M.C., Schiavo, I., Trabalzini, L., Pollini, S., Rossolini, G.M., R. Basosi., & R. Pogni. (2018). Spectroscopic Characterization of Natural Melanin from a *Streptomyces cyaneofuscatus* Strain and Comparison with Melanin Enzymatically Synthesized by Tyrosinase and Laccase. *Molecules*. (23): 1-12.
- Hartati, S., Tarina, L., Yulia, E., & Djaya, L. (2019). Induksi Resistensi dengan *Rhodotorula minuta* untuk Mengendalikan Antraknosa (*Colletotrichum acutatum* J. H. Simmonds) Pada Tanaman Cabai. *Jurnal Agrikultura*. 30(3): 91-99.
- Hayati, N. (2006). Pertumbuhan dan Hasil Jagung Manis Pada Berbagai Waktu Aplikasi Bokashi Limbah Kulit Buah Kakao dan Pupuk Anorganik [Skripsi]. Palu. Universitas Tadulako.
- Herlina, L., Pukan, K. K., & Mustikaningtyas, D. (2016). Kajian Bakteri Endofit Penghasil IAA (*Indole Acetic Acid*) untuk Pertumbuhan Tanaman. *Jurnal Sains Dan Teknologi (Saintekno)*. 14(1). 51-58.
- Huang, Y., Hickman, J.E., & Weisli, A. (2008). Impacts of Enhanced Fertilizer Applications on Tropospheric Ozone and  $\text{SO}_2$  Damage Over Sub-Saharan. *Atmospheric Environment*. 189: 117-125.
- Inayah, M.N. (2020). Komunitas Aktinobakteri Di Tanah Perkebunan Kelapa Sawit Ptpn Vi Jambi Berdasarkan Sekuens Amplikon Gen 16s rRNA. [Tesis]. Bogor: Institut Pertanian Bogor.
- Intra, B., Mungsuntisuk, I., Nihira, T., Igarashi, Y. & Panbangred, W. (2011). Identification of Actinomycetes from Plant Rhizospheric Soils with Inhibitory Activity Against *Colletotrichum* spp ., the Causative Agent of Anthracnose Disease. *BMC Research Notes*. 4(98): 1-9.
- Iriany, R.N, Yasin, M., & Takdir, A. (2016). Asal, Sejarah, Evolusi, dan Taksonomi Tanaman Jagung. *Balai Penelitian Tanaman Serealis, Maros*, Vol. 11.

- Karthikeyan, M., Radhika, K., Mathiyazhagan, S., Bhaskaran, R., Samiyappan, R., & Velazhahan, R. (2006). Induction of phenolics and defense-related enzymes in coconut (*Cocos nucifera* L.) roots treated with biocontrol agents. *Brazilian Journal of Plant Physiology*. 18(3): 367-377.
- Kaur, G., Kaur, J., Dadhich, K. S., & Caemotra, S. S. (2011). Phosphate-solubilizing bacteria *Microbacterium paraoxydans* isolated from the rhizospheric system of wheat (*Triticum aestivum*). *Transylv. Rev. Syst. Ecol. Res.* 12: 149–161.
- Kawuri, R. (2012). Pemanfaatan *Streptomyces* sp. untuk Mengendalikan Penyebab Penyakit Busuk Daun pada Lidah Buaya (*Aloe barbadensis* Mill). Disertasi Doktor. Program Pasca Sarjana Universitas Udayana Denpasar.
- Kilian, M., Poulsen, K., Blomqvist, H., Havarstein, L. S., Bek-Thomsen, M., Tettelin, H., & Sørensen, J.B.S. (2008). Phylogenetic Analysis of *Streptococcus pneumoniae* and its close commensal relatives. *PloS One* 10.3(7).
- Klement, Z., Rudolph K., & Sand, D.C. (1990). Methods. *Phylobacteriology*. Akademiai Kiado: Budapest. 199–204.
- Kumar, S., Stecher, G., & Tamura, K. (2016). MEGA 7: Molecular Evolutionary Genetics Analysis version 7.0 for bigger datasets. *Molecular biology and evolution*. 33(7): 1870-1874.
- Kurniawati, S., & Mutaqin, K. H. (2015). Eksplorasi dan Uji Senyawa Bioaktif Bakteri Agensia Hayati untuk Pengendalian Penyakit Kresek pada Padi. *Journal HPT Tropika*. 15(2), 170–179.
- Lee, SM., H.G. Kong., G.C. Song., & Ryu, C.M. (2020). Disruption of Firmicutes and Actinobacteria Abundance in Tomato Rhizosphere Causes the Incidence of Bacterial Wilt Disease. *The ISME Journal* 15: 330–347.
- Leslie, J.F., & Summerell, B.A. (2006). *The Fusarium laboratory manual*. Iowa (US): Blackwell Publishing.
- Li, J., Sang, M., Jiang, Y., Wei, J., Shen, Y., Huang, Q., Li, Y. & Ni, J. (2021) Polyene-Producing *Streptomyces* spp. From the Fungus-Growing Termite *Macrotermes barneyi* Exhibit High Inhibitory Activity Against the Antagonistic Fungus *Xylaria*. *Front. Microbiol.* 12:649962.
- Li, S., Myung, K., Guse, D., Donkin, B, Proctor, R.H., Grayburn, W.S. & Calvo, A.M. (2006). FvVE1 regulates filamentous growth, the ratio of microconidia to macroconidia and cell wall formation in *Fusarium verticillioides*. *Molecular Microbiology*. 62(5): 1418-1432.

- Liu, C.Y., Liu, C.C., Li, A.F.Y., Hsu, T.W., Lin, J.H., Hung, S.C., & Hsu, H.S. (2022). Glutathione peroxidase 4 expression predicts poor overall survival in patients with resected lung adenocarcinoma. *Sci Rep*, 12: 20462.
- Logemann, E., Tavernaro, A., Shulz, W., Somssish, I.E., & Hahlbrock, K. (2000). Uv Light Selectively Co Induces Supply Pathway from Primary Metabolism and Flavonoid Secondary Product Formation in Parsley. *Proc Natl Acad Sci USA*. 97: 1903–1907.
- Lopez, A.M.F, Ramirez, J.D.C., Alvarez, J.C.M., Mayer, M.L., Sanchez, G.J.L., Gastelum, R.F., Martines, C.C., & Mendoza, I.E.M. (2016). Rizhospheric bacteria of maize with potential for biocontrol of *Fusarium verticillioides*. *Springer Plus*. 5(330): 1-12.
- Marathe, K., Naik, J., & Maheshwari, V. (2021). Biogenic Synthesis of Silver Nanoparticles using *Streptomyces* spp. and their Antifungal Activity Against *Fusarium verticillioides*. *Journal of Cluster Science*. 32(2):1299–1309.
- Marwan, H. (2014). Pengimbasan Ketahanan Tanaman Pisang Terhadap Penyakit Darah (*Ralstonia Solanacearum*) Phylotipe IV) Menggunakan Bakteri Endofit. *Tropika*. 14(2): 128-135.
- Megasari, R., & Nuriyadi, M. (2019). Inventarisasi Hama dan Penyakit pada Jagung (*Zea mays* L.) dan Pengendaliannya. *Musamus Journal of Agrotechnology Research (MJAR)*. 2(1): 1-11.
- Mehari, ZH., Elad, Y., David, D.R., Graber, E.R., & Harel, Y.M. (2015). Induced Systemic Resistance in Tomato (*Solanum lycopersicum*) Against *Botrytis cinerea* by Biochar Amendment Involves Jasmonic Acid Signaling. *Plant Soil*.
- Metboki, B., Astuti, N.P.A., & Pratiwi, M.A.N. (2016). Efektivitas Ekstrak Kulit Batang Ampel (*Eucalyptus alba* Reinw. Ex Bland) dalam Menghambat Pertumbuhan Jamur *Fusarium* sp. Penyebab Busuk Tongkol Jagung (*Zea mays* L.). *Jurnal Metamorfosa III*. (2): 59-64.
- Morrison, L. (2015). *Jasmonic Acid*. Nova Science Publishers.
- Munawara, W. & Haryadi, N.T. (2020). Induksi Ketahanan Tanaman Kedela (*Glycine max* (L.) Merrill) dengan Cendawan Endofit *Trichoderma harzianum* dan *Beauveria bassiana* untuk Menekan Penyakit Busuk Pangkal Batang (*Sclerotium rolfsii*). *Jurnal Pengendalian Hayati*. 3(1): 6-13.
- Muslim, A. (2019). *Pengendalian Hayati Patogen Tanaman Dengan Mikroorganisme Antagonis*. In Unsri Press (1st ed.). UNSRI Press.

- Nafis, A., Raklami, A., Bechtaoui, N., Khalloufi, F.E., Alaoui, A.E., Glick, B.R., Hafidi, M., Kouisni, L., Ouhdouch, Y. & Hassani, L. (2019). Actinobacteria from Extreme Niches in Morocco and Their Plant Growth Promoting Potentials. *Diversity*, (11): 139.
- Narita, V., Arum, A.L., Isnaeni, S., & Fawzya, N.Y. (2012). Analisis Bioinformatika Berbasis WEB untuk Eksplorasi Enzim Kitosanase Berdasarkan Kemiripan Sekuens. *J. Al-Azhar Indones Seri Sains dan Teknol* 1: 197-203.
- Nelson, P. E., Toussoun, T. A., & Marasas, W. F. O. (1983). *Fusarium: Species: An Illustrated Manual for Identification*. The Pennsylvania University Press, University Park London. 226 p.
- Nguyen, P. A., Strub, C., Durand, N., Alter, P., Fontana, A., & Schorr-Galindo, S. (2018). Biocontrol of *Fusarium verticillioides* Using Organic Amendments and Their Actinomycete Isolates. *Biological Control*, 118(1):55–66.
- Nisa C. & Rodinah. (2005). Kultur Jaringan Beberapa Kultivar Buah Pisang (*Musa paradisiaca* L.) dengan Pemberian Campuran NAA dan Kinetin. *Bioscientiae*. 2(2): 223-36.
- Nurjismi, R., & Suryani, S. (2020). Uji Antagonis Actinomycetes terhadap Patogen *Colletotrichum capsici* Penyebab Penyakit Antraknosa pada Buah Cabai Rawit. *Jurnal Ilmiah Respati*, 11(1):1-12.
- Nurzannah, E. S. (2018). Deteksi *Fusarium verticillioides* dan *Penicillium oxalicum* pada benih jagung dengan fiber optic Fluorescence Spectroscop. Bogor: Institut Pertanian Bogor.
- Oliveira, M.F.D., Silva, M.G.D., & Sand, S.T.V.D. (2016). Anti-phytopathogen potential of endophytic Actinobacteria isolated from tomato plants (*Lycopersicon esculentum*) in southern Brazil and characterization of *Streptomyces* sp. RI8(6), a potential biocontrol agent. *Research in Microbiology*, 161: 565-572.
- Omran, R. & Kadhemi, M.F. (2016). Production, Purification and Characterization of Bioactive Metabolites Produced from Rare Actinobacteria *Pseudonocardia alni*. *Asian Journal of Pharmaceutical and Clinical Research*, 9(3): 264-272.
- Pakki, S. & Ma'sud, S. (2005). Inventarisasi dan Identifikasi Patogen Cendawan yang Menginfeksi Benih Jagung. Prosiding Seminar Ilmiah dan Pertemuan Tahunan PEI dan PFI XVI Komda SulSel.
- Pakki, S. & Talanca, A. (2007). Pengelolaan penyakit pascapanen jagung, Dalam Jagung. Pusat Penelitian dan Pengembangan Tanaman Pangan, Bogor. 351–363.



- Parsons, M.W. & Munkvold, G.P. (2012). Effects of planting date and environmental factors on fusarium ear rot symptoms and fumonisin B1 accumulation in maize grown in six North American locations. *Plant Pathology*, 61(6): 1130-1142.
- Paul, P. (2016). Corn Ear Rot: identification, Quantification, and Testing for Micotoxin. <http://agrcrops.osu.edu/newsletter/cornnewsletter/2016/32/corn-ear-rots-identification-quantification-and-testing> [ Diakses tanggal 22 juni 2017].
- Pieterse, C.M.J., Van, W.S.C.M., Hoffland, E., Van, P.J.A., & Van, L.L.C. (2014). Systemic Resistance in Arabidopsis Induced by Biocontrol Bacteria is Independent of Salicylic Acid Accumulation and Pathogenesis-Related Gene Expression. *Plant Cell*, 8: 1225–1237.
- Prakash, D., Nawani, N., Prathali, M., Boudas, J., Mamillal, A., Khetmalas, M., & Kapadnis, B. (2013). Actinomycetes: A Repertory of Green Catalysts with a Potential Revenue Resource, *BioMed Research International*. 8: 264020.
- Purwantisari, S. & Hastuti, R. B. (2009). Isolasi dan Identifikasi Jamur Indigenous Rhizosfer Tanaman Kentang Organik di Desa Pakis, Magelang. *Jurnal Bioma*, 11(2):45–53.
- Purwantisari, S., Rejeki, S.F., & Raharjo, B. (2018). Pengendalian hayati penyakit lodoh (busuk umbi kentang) dengan agens hayati jamur-jamur antagonis isolat lokal. *BIOMA*, 10(2), 13-16.
- Puspita, Y.D., Sulistyowati, L., & Djauhari S. (2013). Eksplorasi Jamur Endofit pada Tanaman Jeruk (*Citrus* sp.) Fusiprotoplas dengan Ketahanan Berbeda terhadap *Botryodiplodia theobromae* Pat. *HPT*, 3(1): 67-77.
- Putri, A.L., Lisdiyanti, P., & Kusnida, J.A. (2018). Identifikasi aktinomisetes sedimen air tawar Mamasa, Sulawesi Barat dan aktivitasnya sebagai antibakteri dan pelarut fosfat. *Bioteknologi Biosains Indones*. 5(2): 139-148.
- Putri, R.A., Sulandari, S., Sumardiyono, C., & Arwiyanto, T. (2018). Respons Ketahanan Tembakau terhadap Tobamovirus dengan Agens Hayati sebagai Induser. *Jurnal Perlindungan Tanaman Indonesia*, 22(2): 201–209.
- Raaijmakers, J.M., Paulitz, T.C., Steinberg, C., Alabouvette, C., & Moenne, Y. (2009). The rhizosphere: a playground and battlefield for soil borne pathogens and beneficial microorganisms. *Plant Soil*. 1 (321):341–361.
- Ramlawi, S., Abusharkh, S., Carroll, A., McMullin, S.R., & Avis, T.J. (2021). Biological and chemical characterization of antimicrobial activity in *Arthrobacter* spp. isolated from disease-suppressive compost. *Journal of Basic Microbiology*. 61(8): 745-756.

- Reid, L.M., & Hamilton, R.I. (1996). Effects of inoculation position, timing, macroconidial concentration, and irrigation on resistance of maize to *Fusarium graminearum* infection through kernels. *Canadian Journal of Plant Pathology*, 18: 279–285.
- Resti, Z., Habazar, T., Putra, D.P., & Nasrun. (2016). Aktivitas enzim peroksidase bawang merah yang diintroduksi dengan bakteri endofit dan tahan terhadap penyakit hawar daun bakteri (*Xanthomonas axonopodis* pv *allii*). *J. HPT Tropika*, 16(2), 131 –137.
- Reyes-Vela'zquez, W.P., Figueroa-Go'mez, R.M., Barberis, M., Reynoso, M.M., Rojo, F.G., Chulze, S.N. & Torres, A.M. (2011). *Fusarium* species (section *Liseola*) occurrence and natural incidence of beauvericin, fusaproliferin and fumonisins in maize hybrids harvested in Mexico. *Mycotoxin Res*, 27:187–194.
- Rinanti, T., Herlina, N., & Rifianto, A. (2021). Efek Populasi terhadap Pertumbuhan dan Hasil serta Fase Perkembangan Tiga Varietas Jagung Manis (*Zea mays* var. *Saccharata*) di Dataran Menengah. *PLANTROPICA: Journal of Agricultural Science*, 6(1), 1–10.
- Riwandi., Merakati., Handajarningsih & Hasanudin. (2014). Teknik budidaya jagung dengan sistem organik di Lahan Marjinal. Bengkulu: UNIB Press.
- Roopa, K.P., & Gadag, A.S. (2019). Management of Soil-Borne Diseases of Plants Through Some Cultural Practices and Actinobacteria. Department of Biotechnology, University of Agricultural Sciences, Dharwad, Karnataka, India. 7: 129-145.
- Sari, F.A., Ali, A., & Junda, M. (2019). Isolasi dan Karakterisasi Actinomycetes Dari Beberapa Sentra Perkebunan Bawang Antagonis *Fusarium oxysporum* f.sp. *cepae* dan Uji Kemampuan Perkecambahan Tanaman Bawang Merah (*Vigna unguiculata* L.) Varietas Tuktuk Super. [Tesis] Makassar. Pasca Sarjana Universitas Negeri Makassar. 19 hal.
- Sari, N. M., Kawuri, R., & Khalimi, K. (2012). *Streptomyces* sp. sebagai Biofungisida Patogen *Fusarium oxysporum* (Schlecht.) f.sp. *lycopersici* (Sacc.) Snyder et Hans. Penyebab Penyakit Layu pada Tanaman Tomat (*Solanum lycopersicum* L.). *AGROTROP*. 2(2): 161-169.
- Sathya, A., Vijayabharathi, R., & Gopalakrishnan, S. (2017). Plant growth promoting actinobacteria: a new strategy for enhancing sustainable production and protection of grain legumes. *Biotech*, 7(2), 1–10.
- Saunders, J.A., & McClure, J.W. (1975). The Distribution of Flavonoids in Chloroplasts of Twenty Five Species of Vascular Plants. *Phytochemistry*, 15: 809–810.

- Schaad, N. W., Jones, J. B., & Chun, W. (2001). Laboratory Guide for Identification of Plant Pathogenic Bacteria. St Paul: The American Phytopathology Society.
- Sharma, P. & Dubey, S. (2005). Lead Toxicity in Plants. *Braz. J. Plant Physiol.*, 17(1): 35-52.
- Silva, H.A.S., Romeiro, R.S., & Macagnan, D. (2004). Rhizobacterial induction of systemic resistance in tomato plant: non-specific protection and increase in enzyme activities. *Biol. Control.* 29(2): 288– 295.
- Simmon, K.E., Mirrett, S., Reller, L.B. & Petti, C.A. (2008). Genotypic diversity of anaerobic isolates from bloodstream infections. *Journal of Clinical Microbiology*, 46(5): 1596-1601.
- Singh, S.P., & Gaur, R. (2012). Endophytic *Streptomyces* spp. Underscore Induction of Defense Regulatory Genes and Confers Resistance Against *Sclerotium rolfsii* in Chickpea. *Biological Control*, 104: 44-46.
- Siregar, S., & Sari, M.S. (2021). Identification of disease and pathogen attack level on corn (*Zea mays*) in BPP Stabat. *Serambi J. of Agricultural Technology*. 3(2): 83-90.
- Sivan, A. & Chet, I. (1986). Biological control of *Fusarium* spp. in cotton, wheat and muskmelon by *Trichoderma harzianum*. *J. Phytopathology*, 116: 39-47.
- Solans, M. & Vobis, G. (2013). Biology of actinomycetes in the rhizosphere of nitrogen fixing plants, In: Amoroso, M.J., Benimeli, C.S., Cuozzo, S.A. (Eds.), Actinobacteria. Application in Bioremediation and Production of Industrial Enzymes. *CRC Press, Boca Raton*. 1–25.
- Solekh, R., Susanto, H., Nurjoko, E., Nuringtyas, T.R., & Purwestri, Y.A. (2019). Phenylalanine Ammonia Lyase (PAL) Contributes to The Resistance of Black Rice Against *Xanthomonas oryzae* pv. *oryzae*. *Journal of Plant Pathology*.
- Sosovele, M.E., Hosea, K.M., & Lyimo, T.J. (2012). In vitro antimicrobial activity of crude extracts from marine *streptomyces* isolated from mangrove sediments of Tanzania. *J Biochem Tech* 3(4): 431-435.
- Spindler, K.D. (1997). Chitinase and Chitonase Assays, R.A.A. Muzzarel and M.G Petter (eds), Chitin Handbook. Grottamare: Alda Tecnografica.
- Sreelakshmi, K.S. & Usha, R. (2023). Structural and Functional Dynamics of Secondary Metabolite from *Actinokineospora cibodasensis* against *Pseudomonas aeruginosa* Biofilm. *Oriental Journal of Chemistry*. 39(6): 1589-1598.



- Stach, J.E.M., Maldonado, L.A., Ward, A.C., Goodfellow, M., & Bull, A.T. (2003). New primers for the class *Actinobacteria*: application to marine and terrestrial environments. *5(10)*:828-841.
- Subramaniam, G., Arumugam, S., & Rajendran, V. (2016). *Plant Growth Promoting Actinobacteria*. Springer Nature.
- Sudantha, I.M. (2010). Uji efektivitas beberapa isolat jamur endofit antagonistik dalam meningkatkan ketahanan terinduksi beberapa klon vanili terhadap penyakit busuk batang. *Agroteksos*, 19: 1-2.
- Suhartono., & Artika, W. (2017). Isolasi dan uji aktivitas protease dari aktinobakteri isolat lokal (AKJ-09) Aceh. *BIOLEUSER*, 1(3):116-120.
- Sulaiman, A.A., Kariyasa, I.K., Herdiana, K., Subagyo., & Bahar, F.A. (2018). Cara cepat swasembada jagung. IARD. *Badan Penelitian dan Pengembangan Pertanian*, Jakarta. 140.
- Supriyatno, B. (2017). Perhitungan Ekonomik Budidaya Tanaman Jagung Sistem Pertanian Organik. *MPRA*, 1(1) : 1-21.
- Suresh, K., Ravi, K.Y.S., Gaur, S., Sujan, G.P.S., Arjun, H.M., & Gaur, P. (2019). *Arthrobacter* Strains from Industrial Polluted Soil and its Oxidative Potential of Choline Oxidase Gene. *J. Pure Appl Microbiol.* 13 (3): 1847-1854.
- Suriani, & Muis, A. (2016). *Fusarium* pada Tanaman Jagung dan Pengendaliannya dengan Memanfaatkan Mikroba Endofit. *Iptek Tanaman Pangan*, 11(2):133-141.
- Suriani., Muis, A., & Anniah. (2015). Efektivitas 8 formulasi *Bacillus subtilis* dalam menekan pertumbuhan *Fusarium moniliforme* secara *in vitro*. *Prosiding Seminar Nasional Serealia 2015*. 428-435.
- Suryadi, Y., Susilowati, D.N., & Fauziah, F. (2018). Bioprospeksi Berbasis Sumber Daya Genetik Mikroba untuk Pengelolaan Penyakit Tanaman. *Balai Besar Penelitian dan Pengembangan Bioteknologi dan Sumber Daya Genetik Pertanian*. Bandung.
- Suryadi, Y., Susilowati, D., Samudra, I.M., Permatasari, M., & Ambarsari, L. (2020). Karakterisasi Kitinase Isolat Bakteri Rhizosfir Asal Cianjur dan Aktivitasnya Terhadap Patogen *Collectotricum* sp. *Bioma*. 9(1) : 54-71.
- Suswati., A. Indrawaty., & Friardi. (2015). Aktivitas Enzim Peroksidase Pisang Kepok Dengan Aplikasi *Glomus* Tipe 1. *J. HPT Tropika* 15(2): 141-151.

- Takahashi, H., Ikematsu, K., Tsuda, R., & Nakasono, I. (2009). "Functional role of phenylalanine ammonia-lyase in the phenylpropanoid pathway in plants." *Journal of Plant Research*, 122(5): 503-509.
- Thomas, B., Nicolas, Z., Zitomeri, A.M., Mitchell, T.R., Bacon, C.W., Riley, R.T. & Glenn, A.E. (2014). Maize seedling blight induced by *Fusarium verticillioides* accumulation of fumonisin B1 in leaves without colonization of the leaves. *Agric. Food Chem*, 62(9): 2118–2125.
- Toumatia, O., Compant, S., Yekkour, A., Goudjal, Y., Sabaou, N., Mathieu, F., Sessitsch, A. & Zitouni, A. (2016). Biocontrol and plant growth promoting properties of *Streptomyces mutabilis* strain IA1 isolated from a Saharan soil on wheat seedlings and visualization of its niches of colonization. *South African Journal of Botany*, 105: 234–239.
- Tyagi, S., Mulla, S.I., Lee, K., Lee, H., & Shukla, P. (2018). VOCs-mediated Hormonal Signaling and Crosstalk with Plant Growth Promoting Microbes. *Crit. Rev. Biotechnol*, 38: 1277–1296.
- Vahdati, N., Tehranifar, A., & Kazemi, F. (2017). Assessing chilling and drought tolerance of different plant genera on extensive green roofs in an arid climate region in Iran. *Journal of Environmental Management*. 192(2):215-223
- Varina, F. (2018). Dampak tarif impor jagung terhadap kesejahteraan pelaku pasar jagung Indonesia. *Agrobisnis dan Teknologi*, 3(1): 2528-3278.
- Vijayabharathi, R., Gopalakrishnan, S., Sathya, A., Srinivas, V., & Sharma, M. (2018). Deciphering the tri-dimensional effect of endophytic *Streptomyces* sp. on chickpea for plant growth promotion, helper effect with *Mesorhizobium ciceri* and host-plant resistance induction against *Botrytis cinerea*. *Microbial Pathogenesis* 122: 108-117.
- Villena, J., Kitazawa, H, Van Wees, S.C.M., Pieterse, C.M.J., & Takahashi, H. (2018). Receptors and Signaling Pathways for Recognition of Bacteria in Livestock and Crops: Prospects for Beneficial Microbes in Healthy Growth Strategies. *Front. Immunol* 9:2223.
- Wahyudi, A.T., Priyanto, J.A., Fijrina, H.N., Mariastuti, H.D., & Nawangsih, A.A. (2019). *Streptomyces* spp. from Rhizosphere Soil of Maize with Potential as Plant Growth Promoter. *Biodiversitas*, 20(9): 2547-2553.
- Wahyudin, A., D. Widayat., Nurmala, T., Wicaksono, F.Y., Irwan, A.W., & Hafiz, A. (2018). Respons tanaman jagung (*Zea mays* L.) hibrida terhadap aplikasi paraquat pada lahan tanpa olah tanah (TOT). *Jurnal Kultivasi* 17(3): 739-743.

- Wan, J., Yuan, X., Han, L., Ye, H., & Yang, X. (2020). Characteristics and distribution of organic phosphorus fractions in the surface sediments of the inflow rivers around hongze lake, China. *International Journal of Environmental Research and Public Health*, 17(2), 1–16.
- Wang, Z., Arat, S., Magid-Slav, M., & Brown, J.R. (2012). Meta-analysis of human gene expression in response to *Mycobacterium tuberculosis* infection reveals potential therapeutic targets. *BMC Syst Biol*. 12(3).
- Wibowo, S.T., Hami, M., & Wahyudi, A.T. (2009). Kandungan IAA, serapan hara, pertumbuhan dan produksi jagung dan kacang tanah sebagai respon terhadap aplikasi pupuk hayati. *Jurnal Ilmu Pertanian Indonesia*, 14(3): 177-183.
- Wijayanti, K.S. (2019). Penanaman Rhizobakteria untuk Mengendalikan Nematoda Pulu Akar (*Meloidogyne* spp.) pada Kenaf (*Hibiscus cannabinus* L.). *Buletin Tanaman Tembakau, Serat & Minyak Industri*, 10(2) :90–99.
- Wojtaszek, P. (1997). The Oxidative Burs : An Early Plant Response to Pathogen Infection. *Biochem.J.* 322(3): 681–692.
- Woese, C.R. (1987). Bacterial Evolution. *Microbiol Rev.* 51(2):221-71.
- Wulan, R., Astuti, R.I., Rukayadi, Y., Estuningsih, S. & Meryandini, A. (2022). Seleksi, Karakterisasi Morfologi, dan Identifikasi Aktinobakteri Penghasil Mananase Asal Hutan Tanah Jambi untuk Produksi Mananoligosakarid. *Jurnal Ilmu Pertanian Indonesia (JIPI)*, 27(2): 279-286.
- Yadav, A.N., Verma, P., Kumar, S., Kumar, V., Kumar, M., Chellamall, T., Sughita, K., Singh, B.P., Saxena, A.K., & Dhalwal, H.S. (2018). Actinobacteria from Rhizosphere: Molecular Diversity, Distributions, and Potential Biotechnological Applications. *New and Future Developments in Microbial Biotechnology and Bioengineering*, 2: 13-41.
- Zade, N.S.E., Sadeghi, A., & Moradi, P. (2018). *Streptomyces* strains alleviate water stress and increase peppermint (*Mentha piperita*) yield and essential oils. *Plant Soil*.434(1): 441–452.
- Zainuddin, N.A.I.M., Hamzah, F.A., Kusai, N.A., Zamri, N.S., & Salleh, S. (2017). Characterization and pathogenicity of *Fusarium proliferatum* and *Fusarium verticillioides*, causal agents of Fusarium ear rot of corn. *Turk J Biol*, 41: 220-230.
- Zainuddin, U. (2020). The Application of *Tricoderma* sp. and *Streptomyces* sp. on the Production of Onion (*Allium sativum* L.). *Jurnal Galung Tropika*, 9(3), 342–347.

Zarandi, M. E., Riseh, R.S., & Tarkka, M.T. (2022). Actinobacteria as Effective Biocontrol Agents against Plant Pathogens, an Overview on Their Role in Eliciting Plant Defense. *Microorganisms*, 10(9), 1–15.

Zhang, D., Liu, T., Xu<sup>1</sup>, Y., Ding, D., Wen, J., & Zhu, B. (2018). Genetic engineering of *Escherichia coli* to improve L-phenylalanine production. *BMC Biotechnology*. 18:5.

